



ANCIENT SKIES

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Official Logbook of the Ancient Astronaut Society

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VOLUME 14, NUMBER 1, 1921 ST. JOHNS AVE., HIGHLAND PARK, ILLINOIS 60035-3105 USA

MARCH-APRIL, 1987

ENIGMAS OF MAYAN ASTRONOMY

BY ANDREW TOMAS*

In speaking about the "first men" the Mayan sacred book Popul Vuh tells us that: "When they looked, instantly they saw all around them and they contemplated in turn the arch of heaven and the round face of the earth; they were able to know all."

The Olmecs and the Mayas must have acquired the wisdom of these legendary "first men" because their achievements, particularly in the fields of mathematics and astronomy, still amaze historians of Central America.

Mayan mathematics could count in millions and used the concept of zero a thousand years before the Europeans did. Their mathematics employed only three symbols - a dot for one, a bar for five and a shell shape for zero.

The Mayan astronomer-priests predicted solar eclipses so accurately that their expertise could have appeared only after many centuries of observation. These Mayan astronomers calculated that 405 full moons occurred in a period of 11,960 days. The figure of modern astronomy is 11,959.888 days. Similar precision is also seen in the Mayan calculation of the Venusian year which they established as 584 days after four centuries of astronomical observation. The current calculations make it 583.92 days.

The Mayan measurement of the tropical year was 365.2420 days as compared with the present estimate of 365.2422 that was arrived at with chronometers and other precision instruments.

It is believed that the Dresden Tables, which list multiples of 78, show a table for Mars which has a synodic year of 780 days. The Paris Codex shows a rattlesnake, a turtle and a scorpion. The constellation Pleiades was called by the Mayas "rattlesnake rattle" and the stars of Gemini the "turtle". Strangely, the constellation of Scorpion had the same name in Central America as in ancient Babylon, Egypt and Greece. This part of the Codex has been recognized as a symbolic star map of the Mayas.

The Copan Mayas calculated the duration of the lunar month as 29.53020 days while the Palenque astronomers had a slightly different figure of 29.53086 days. The present-day scientific calculations show the lunar month to be 29.53059.

The Stele I of El Castillo in Santa Lucia Cotzumalhuap in Guatemala had remained an undeciphered

Maya diagram until 1956 when C.A. Burland of the British Museum identified it as a transit of Venus at the International Congress of Americanists in Paris. The pictorial inscription indicates that Venus crossed the solar disk on November 25, 416 AD.

The Mayan chronology was not lunar but mainly solar, although they took into consideration the revolutions of the moon and the planet Venus. In fact, the Mayas had not one calendar but three. The first (haab) was made up of 18 months of 20 days each, plus a terminal period of 5 days, making 365 days.

The second calendar (tzolkin) consisted of 260 days and was regarded as sacred. The third was the "long count" which reckoned the number of days since the beginning of the Mayan era, or 3113 BC.

The "katun" was a period of 7,200 days, or 20 years. Then there was a cycle of 52 years at the end of which everything had to be renewed. Thus the Mayan calendar was made up of three independently revolving "wheels" recording interrelated cycles of time. This tri-cyclical calendar had practical uses as the priest-astronomer told the farmer when to sow, to expect rain or to harvest. The seafarer received a weather forecast from the learned priests before embarking on a voyage.

The Maya had an obsession with time and believed that it was cyclical. In their mind the universe passed through long cycles of creation and destruction. These eras, each about 5,200 years long (13 baktuns), ended with terrible cataclysms. The first year of the Mayan calendar of the "long count" began in 3113 BC and it will end in 2011 AD.

Maurice Chatelain, a mathematician and NASA scientist of French descent who helped launch man on the moon, writes in his book Our Ancestors Came from Outer Space (1) that the Mayas knew of the existence of Uranus and Neptune. In view of the fact that none of the ancient civilizations of Babylon, Egypt, China or Greece had ever mentioned Uranus and Neptune, discovered only in 1781 and 1846, respectively, the awareness of these distant planets by the Mayas confirms their image of competent astronomers and raises a possibility of the use of a telescope because Uranus can be seen with the naked eye only under favorable conditions while Neptune is invisible without optical aid.

At Quirigua, Guatemala, three glyphs - katun 17, ahau 13, cumbu 18 - expressed a date that would not be repeated for 19,000 years! Our calendar of unequal months, fluctuating from 28 to 31 days, would have seemed ridiculous to the priest-astronomers of Mesoamerica.

To keep their calendar precise the Mayas had to be good astronomers and mathematicians. As a cultural entity the Mayas endured for 3,700 years. This long period saw the gradual rise of Mayan astronomy. Since the Mayan priests supposedly lacked an hour glass and optical instruments, their degree of accuracy remains an enigma to modern scientists.

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An altar at Copan, Honduras shows in relief an assembly of 16 priest-astronomers, four on each side. It is a monument to an astronomical congress held in 765 AD at Copan for the purpose of making predictions of solar eclipses and of adjusting the Mayan calendar to astronomical observations.

Astronomical observations require quietness and a suitable building with a tower or an observatory. Anthropologists and historians generally agree that the round building erected on two platforms at Chichen Itza in Yucatan, Mexico, called El Caracol, is a Mayan observatory. El Caracol ("the snail" in Spanish) owes its name to an interior spiral staircase which leads to a small observation room under a domed roof. It has a central vertical shaft for meridian sightings. Through three openings in the walls of the tower, ancient astronomers must have scrutinized the heavens and made star alignments for their computations.

The fact that the Mayas had a more precise calendar than our own, that they had astronomical congresses and an observatory, has brought us to an even more fantastic possibility - that the Mayan astronomers had telescopes! I had never considered this possibility until I received a letter from a Society member who read my article in *Ancient Skies* 13:5, "Advanced Science in Antiquity." His name is V.N. "Gus" Gercke, a retired electronics engineer now living in Weimar, California. His hobby is amateur astronomy and he has made a number of telescopes with his own hands.

Gus Gercke has made thirteen trips to the Yucatan and he told me that he met a descendant of a Maya priest with whom he conversed in Spanish. Gus said that he has found evidence of ancient telescopes in Mexico. I asked him to send me all the available facts on the subject and in due course I received a list of one hundred books with a number of photocopies of pages from some of the books dealing with Mayan artifacts, among which were concave and convex mirrors excavated in Mexico and Guatemala since the 19th Century. These scientific sources came from Mexico City, New York, Washington, D.C., Paris, London and Hamburg. One of the books entitled *Excavations at La Venta, Tabasco* (1955) is apparently of such high academic quality that it earned the privilege of being published as a Bulletin of the Smithsonian Institution and printed by the United States Government Printing Office. This book by Drucker, Heizer and Squier contains definite data regarding the Maya mirrors found at La Venta. It must be pointed out that their size is by no means small - they are about 12 centimeters across which is the size used by most amateur astronomers today. The predominant materials of which they were made are magnetite, ilmenite and hematite.

I decided then to carefully analyze the data on concave mirrors, because a concave mirror is the central optical element of a reflector telescope. First, a digression must be made to explain the principle of a simple reflector telescope which does not require lenses. The 18th Century telescope of Herschel can serve as an example of such a reflector. A large concave mirror was placed at the bottom of a thick tube while the upper part was left open. The focus was intentionally fixed to be near the rim of the front or upper aperture. On climbing to the upper edge of the telescope, the King's Astronomer was able to see the larger and brighter images of the celestial bodies reflected by the concave mirror.

Gus Gercke has examined the characteristics of the La Venta concave mirrors made of ilmenite (half iron-oxide and half titanium-oxide). Modern glass concave mirrors for telescopes are covered with aluminum, evaporated in a vacuum. The Mayan mirrors were apparently covered with mercury. In fact, quantities of cinnabar (from which mercury is de-

rived) have been located at two different sites together with 18 pointed "celts" (ancient stone tools) between 6 and 10 inches long. Their shape and arrangement in which they were found at the two locations were similar.

An Appendix in the Smithsonian Bulletin contributed by Jonas Gullberg outlines the physical characteristics of the La Venta concave mirrors: "No verbal description can convey the remarkable technical and artistic quality of the La Venta mirrors. All of the specimens studied are essentially similar, indicating that they must represent a deliberate, tradition-directed form.

"...The polish of the specimens is excellent and probably represents the limit of perfection that the material will allow.

"...a careful study of the curvatures soon revealed a changing radius of curvature from the center to the outer edge of each mirror. The radius of curvature becomes progressively greater as the edge is approached. The effect is almost identical with the modern practice of parabolizing optical reflectors." (Emphasis added.)

A concave mirror does two things - it magnifies the size of the observed object and increases its light intensity. That is how William Herschel watched the stars through his 20-inch reflecting telescope in 1787 and discovered two satellites of Uranus - Titania and Oberon.

In the same manner the Mayan astronomers may have studied the moon, the planets and some of the brighter stars. The concave mirrors were most probably placed in tubes made of palm trees which have disappeared with time.



An Olmec life-size stone figure with a plaque on a necklace from which a concave mirror came off. (Museum of Anthropology, Mexico City)

It is an established fact that the Mayan priest-astronomers produced a superior calendrical system in the course of long centuries. Four centuries ago their astronomical skills surpassed the learning of European savants. They held an astronomical congress in the 8th Century when Western civilization was enshrouded by the Dark Ages.

In view of their scientific attainments the Mayas probably used the concave mirrors as telescopic mirrors which enabled them to see celestial bodies larger and clearer.

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The superiority of Mayan astronomy and the enigmas connected with it may perhaps be resolved by admitting the presence of optical instruments in antiquity. On the other hand, did they receive a scientific legacy from the legendary "first men" of Central America who "knew everything"?

In the meantime, the Mayan concave mirror could well become another fantastic artifact from antiquity such as Wilhelm KÖning's Babylonian battery, or Dr. Derek Price's "computer" from ancient Greece, both of which have been accepted as genuine technological contrivances by the historians of science.

(1) Maurice Chatelain's book was first published in Paris in 1975 by Robert Laffont. The English edition was published by Doubleday, New York, in 1977, 1978 and the paperback edition in English was published by Dell, New York in 1979. [Ed. The book is must reading for all serious students of the ancient astronaut theory.]

TO THE ANCIENT ASTRONAUT SOCIETY:

In my 13 trips to Yucatan, I came across the remains of Maya OPTICAL Telescopes 2000 to 3000 years of age. Naturally, only optics (concave mirrors) made of a mineral called Ilmenite remained, all wooden parts did not leave even dust. The "learned" archaeologists tell me that I am a "crackpot" because Mayas did not know how to work glass, therefore they could not make lenses, therefore they could not have telescopes. I tell them that they visualize a telescope as a metal tube stuffed with glass lenses, and that kind of telescope was replaced nearly 100 years ago with a telescope that has only one big CONCAVE (parabolic) mirror. The eyepiece (which is glass) was not needed for the work the Mayas were doing. Also, it could be, and maybe was, made of quartz crystals.

I found a lot of these concave mirrors (mostly parts of them) in literature and in the museums, but they are listed as being of "ornamental or religious use". You will have to run the archaeologists through a new education system - starting with the kindergarten - to make them see the light. Until then, I am a "crackpot."

I mailed all of my material on the subject to Andrew Tomas who said he would write an article on it for publication.

V.N. Gercke, Box 143, Weimar, California 95736 USA.

COMING EVENTS:

1. MEMBER EXPEDITION to Yugoslavia, Turkey and Greece Mainland, Sept. 5 to 27, 1987, with optional Mediterranean cruise to several Greek Islands until Oct. 2, 1987. Anyone interested in participating in all or part of the expedition should contact the Society Headquarters.
2. WORLD CONFERENCE of the Ancient Astronaut Society September 10 through 12, 1987 to be held at the Hotel Lisanj in the Adriatic resort town of Novi Vinodolski, Yugoslavia. Members in the U.S., Canada and Mexico may contact the Society Headquarters for details. All other members should write to Ancient Astronaut Society, Baselstrasse 1, 4532 Feldbrunnen/SO, SWITZERLAND.

ANCIENT SKIES is published bi-monthly by the ANCIENT ASTRONAUT SOCIETY, 1921 St. Johns Ave., Highland Park, Illinois 60035-3105 USA, for distribution to its members. Tel. (312) 295-8899.

The Ancient Astronaut Society, founded in 1973, is a tax-exempt, not-for-profit corporation organized exclusively for scientific, literary and educational purposes.

CLOSE ENCOUNTERS

BY LIZ COLLINS*

Atheism may well be the ultimate religious arrogance - not because it fails to give credence to the idea of an omnipotent god, but because it assumes that idea to be the only viable alternative.

In what is loosely described as "the West", in countries mainly derived from white European cultures, religion is thought to be synonymous with Christianity or Judaism: a person is not religious who fails to worship their god; an atheist is one who fails to acknowledge their god; and pagans are all people who are not Christians, Muslims or Jews.

These last three are all similar in that their shared idea of one god replacing all others derives from a "close encounter of the third kind" - a collective experience of the Jews fleeing Egypt at a time of earthly upheaval and natural cataclysm about the 14th Century BC. The "god" they encountered displayed some exceedingly human frailties - jealousy, the desire to dominate, the desire to punish or reward, and the desire to produce a set of rules for its followers to be enforced by threat of death or banishment. Its love was totally conditional, depending upon loyalty and obedience and withdrawn for any slip from grace, and it sought to rule by fear.

It also produced terrifying and alien technology, and displays of temporal power calculated to terrify or awe its new followers into obedience. And it made clear the role of the followers: they were to be its servants and to do its will.

It is really quite extraordinary that this one encounter, occurring within the context of a natural catastrophe for which it was blamed and took the credit, could have so impressed itself upon the human psyche that the god is still worshipped, feared and loved, some 3,400 years after the event. And that failure to acknowledge it as the only and supreme deity is considered by theists and atheists alike to be a rejection of any life-energy or intelligence other than our own.

The idea of many gods, and many close encounters of the third kind, spread through Greece, Egypt and Asia for hundreds if not thousands of years before this one. These gods had a tendency to land on mountain tops, then depart for the stars after they had founded dynasties, taught learning in mathematics, astronomy, writing and wisdom. All brought new technology, new strains of cattle and grain, and left memories of legendary prowess as heroes and lovers and sometimes of great battles among themselves. They were supermen and superwomen, and after their departure they were deified and immortalized in temples and in rituals.

Each would become a culture hero or heroine to the colony it founded, and in time would become venerated as god or goddess. Early Greeks, Egyptians and Persians had great religious tolerance, and while their own gods accompanied them on their conquests they were assimilable to the gods of others and could easily co-exist with them. The thorns in their sides were the Jews, who refused to have their one true god either tolerated with another or assimilated, and who regularly engaged in armed uprisings in its defense and sought to impose its rule on earth.

The rise of Roman military power coincided with the decline of the power and calibre of the Ptolemies who ruled Egypt from Alexandria and of the Seleucids, in what we now know as the Middle East, and of the Greeks, who had been fighting each other since the death of Alexander the Great. In that context, with the Maccabees, the Jews were able to establish sovereignty over Palestine in 166 BC and, though almost constantly in a state of war, to maintain it until the Roman takeover nearly a hundred years later. After that there were scattered up-

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risings of Jewish communities in cities like Alexandria, Cyrene, Damascus and others, culminating in the Jewish War with Rome that lasted some four years until it was put down in 70 AD. Further city revolts were put down by Trajan in 113 and 115 AD and Hadrian finally destroyed Jerusalem in 131 AD.

The Jews were finished as a power base for the one god, but the Christians were not. Like the Jews, they remained persecuted, bloodied, but unbowed until the conversion of Constantine in 312 AD. He made Christianity the preferred religion of the Roman Empire and shifted the capital from Rome to Byzantium, renaming it Constantinople (now Istanbul).

Encyclopaedias say the city enjoyed a golden age until the time of Justinian (527-565 AD). However, it wasn't a golden age for non-Christians. The city was decorated and enriched by looted statues, marbles and works of art from the pagan temples of Greece and the Middle East, and in 379 AD Theodosius the Great became Emperor, became a Christian, and made worship of all gods but the one with which our story began punishable by death. Christianity became the state religion of the Roman Empire, the temples of all other gods were destroyed by edict and so were their records and libraries. Theodosius II gave orders for the destruction of the library at Alexandria, an edict carried out by his bishop and finally completed by Christian and Muslim mobs in the 7th Century AD.

The ancient wisdom of the world, and with it all its science, was destroyed or removed and hidden away, and we began the horrendous slide into darkness and ignorance, the murder of non-believers and heretics, the scourge of the Inquisition, and hundreds of years where the brutal edicts of the one god of the close encounter totally over-ruled the humane teaching of the reformer who was claimed as Christianity's founder.

With the rise of Islam in the 6th Century AD, marking a return to the original rules of the god as given to the Jews but with a new prophet to interpret them, there became two enforcers of the god's will who mostly annihilated the gods of others by military conquest and occasionally forgot their common roots and fought each other. In the centuries that followed, this became an attempt at world conquest, and both justified and motivated the horrors perpetuated in his name.

In the 14th Century, when Islam was about to overcome Constantinople, some of the previously hidden books of the ancient world found their way to Italy and became the impetus for the Renaissance. This humanistic revival of classical art, literature and learning spread throughout Europe, and in the 17th Century came the Reformation, and the arising of the Protestant churches. However, while diminishing the power of hierarchies and humanizing the religion, they retained most of the original ideas of the punishments of the god and the terrors of hell-fire and damnation, and the belief that only by following him could anybody be saved. What did get revived were some of the sayings of Jesus, and some of the reforms he had tried to institute in his lifetime began to infiltrate dogma.

What we seem to have now is a shared belief among Christians of most denominations that their religion is about compassion, brotherly love and charitable acts, and that it includes the idea of human rights and spiritual equality. This of course is much closer to the idealism of its prophet founder, and shows up in a very different way from the teaching of the prophet of Islam.

But what is significant in all the one-god religions is that at bottom they all believe in the continued existence and power of the god of the close encounter, and that while he no longer intervenes in the affairs of this planet, it is dangerous and sinful to forget him.

Philosophically it is not remarkable that more than half the world's people have managed to resist the attraction of such a god, and have more or less remained within their own cultural religious heritage; but given the self-righteous efforts to impose the one god and the power of those who attempted it, it is remarkable indeed.

What is most remarkable is the arrogance that remains, both in the belief in this one god and in the atheist's denial as if he were the only one.

*Liz Collins is an author. Her latest book is entitled The Alexander Conspiracy. Her address is Flat 9, 7 O'Brien St., Bondi NSW 2026, AUSTRALIA.

MYSTERY IN GUATEMALA

BY Dr. OSCAR R. PADILLA L.*

Some time ago I was sent a photograph of a very unusual monolith which is located somewhere in the jungles of Guatemala. The photograph was taken in 1950 by the owner of the land where the huge stone sculpture is located, but he has since died and I have been unable to determine where it is.

The sculpture depicts the head of a person with very fine features - thin lips, a large sharp nose, with a Caucasian aspect overall. The eyes are closed, as if the person is asleep. The enormous size of the head is readily apparent from the photograph, and it is possible that there is a complete body of the figure buried beneath the ground under the head, as was found to be the case on Easter Island.

I am very interested in learning where the statue is located so I can mount an expedition to explore the site, examine and measure the carving, take photographs and search for other monoliths in the vicinity.



Photo taken in 1950 of huge stone head "lost" in the jungles of Guatemala.

*Dr. Padilla is a doctor of philosophy and a lawyer and notary, with many active avocational interests, including ancient astronauts, UFOs, aerial phenomena research, parapsychology and other fields. If any member has any information as to the location of the mysterious monolith in Guatemala, they may contact the Society Headquarters, or write directly to Dr. Oscar R. Padilla L., 3a. calle 6-15 "A", Zona 9, Edificio Sanchez, Planta Baja, Guatemala City, GUATEMALA, Central America.